



determine  $x$  so that  
box is biggest volume.

$$V = (12-2x)(16-2x)(x)$$

$$V = (192 - 56x + 4x^2)x$$

$$V = 192x - 56x^2 + 4x^3$$

$$x \in (0, 6)$$

deriv:

$$V' = 192 - 112x + 12x^2$$

$$V' = 4(48 - 28x + 3x^2)$$

$$48 - 28x + 3x^2 = 0$$

$$x = \frac{28 \pm \sqrt{28^2 - 12(48)}}{6}$$

5.6 examples

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